



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

500 2662

D206-642-341BL
Job Sheet 166607



Part No: D206-642-341BL

Job Qty: 1 ea

Part Name: Replacement Skidtube (Fits LH or RH)



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 10/12/17

Job Tracking No:

Due Date: 10/27/17

Created By: Mario Poulin

Type: Stock

Description:

Note: DWG REV F(DEO) IPP Rev: H 05.10.11 Added D3429-1 per CHG004 KJ/CP/JLM IPP Rev: I 08-09-29 revF as per dwg DD verified by: EC Est Rev: J 09-03-02 as per DSI9440 rev.a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC ver: DD IPP Rev: L 12.11.22 now swage per ecn12-679 DD ver: JLM IPP REV: M 14.04.25 ECN14-520 DD ver: JLM IPP REV: N 15.10.09 ADDED BL DD VERF: JLM IPP REV: O 16.01.22 PAR16-484 DD VERF: JLM

Ship Via:

Bill of Materials

Part/Part Name	Part Note	Serial No	Quantity	Location
D206-642-341BL Replacement Skidtube (Fits LH or RH)	DWG REV F(DEO) IPP Rev: H 05.10.11 Added D3429-1 per CHG004 KJ/CP/JLM IPP Rev: I 08-09-29 revF as per dwg DD verified by: EC Est Rev: J 09-03-02 as per DSI9440 rev.a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC ver: DD IPP Rev: L 12.11.22 now swage per ecn12-679 DD ver: JLM IPP REV: M 14.04.25 ECN14-520 DD ver: JLM IPP REV: N 15.10.09 ADDED BL DD VERF: JLM IPP REV: O 16.01.22 PAR16-484 DD VERF: JLM	F0000016	0.000	SUSPECT
ALS4-1032-130 Rivnut		FM136579-1	20.000	ST555
CCR264SS3-3 Cherry Rivet		FM137622	298.000	FP001
CR3212-4-03 Cherry Rivet		FM137321-1	49.000	FP001
D2620 Skidtube, 206	DWG REV B IPP D 02.07.26 Change Dwg to rev.B; Updated Location RF	FM137886-0	200.000	CCK003
Skidtube		F163195	2.000	LG002
D2646BL Aft Cap	DWG REV C IPP: G 05.08.22 Hole size revised in Step 5 KJ/JLM IPP Rev: H Changed Inserts 07-02-19 JLM IPP rev I changed inserts 07.06.11 EC IPP REV: J 15.10.09 ADDED BL DD VERF: JLM	F164474	28.000	LG002
D2647 Cap	DWG REV F IPP Rev: D 99.01.25 Re-format DM IPP: E 06.11.15 waterjet EC	F162857	1.000	LG001
D2651-1BL Plug	DWG REV B IPP: A 02.04.15 New Issue NG IPP: B	F163996	40.000	LG001
D2651-3 O-Ring	DWG REV B IPP rev. A 06.02.15 new issue EC	F161575	21.000	FP001
		F164227	500.000	FP001
		F161517	54.000	FP001
		F161517-3	230.000	FP001
		F164534	260.000	FP001
D2654-5 Web	DWG REV F SHEET 2 IPP Rev: D 99.02.04 Fixed typo, Changed procedure DM	F164376	3.000	LG002
D2680-041 Nut Plate	DWG REV B1 IPP: D 04.10.01 Added Steps 2-4, 7-8 KJ/JLM IPP Rev: E Now on WaterJet 06-10-12 JLM IPP rev F QC5 after c'sink 07.07.05 EC	F141543	6.000	LG001
		F158428	48.000	FP001
		F161578	3.000	FP001
		F164243	20.000	FP001
D3537-1 Wearpad	DWG REV E IPP Rev: A New Issue 07-02-14 JLM IPP REV: B 15.10.16 added automated welding DD ver: JLM	F125911	1.000	ST182
		F165390	89.000	FP001
		F165504	6.000	FP001
D3537-3 Wearpad	DWG REV E IPP Rev: A New Issue 07-02-14 JLM IPP REV: B 15.10.16 AUTOMATED PROCESS DD VERF: JLM	F164273	11.000	FP001
D4720-1 Spacer	DWG REV A IPP REV: A 12.11.20 NEW ISSUE DD VERF: JLM	F161569	116.000	LG001
		F163757	474.000	LG001

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS			
Part No. _____		Rework ☐	Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐	
NCR No. _____		Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	
		Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	
		Suspected Unapproved ☐	Large Fab ☐	Composite ☐	Supplier ☐		
Date: _____		Step #: _____		251042) Approval			
Description Work Order Deviation		Job No: 166607		Change No: _____			
		Qty Date: 10/26/17		Quantity: _____			
		HandFinish 1		Operation: _____			
		D206-642-341BL		Revision: _____			
		Replacement Skidtube (Fits LH or RH)		PART NO: _____			
				Completed By _____			
		Dart Aerospace Ltd.		and / Supervisor _____			
		1270 Aberdeen Street		Approval Verification _____			
		Hawkesbury, ON K6A 1K7		QA Coordinator _____			
		TEL: 1 613 632-5200		Approval _____			
		Email: sales@dartaero.com		_____			
		www.dartaerospace.com		_____			
Root Cause		Pressure,		_____			
Environment ☐	No Re-verification ☐	Bending ☐	_____	_____			
Design ☐	Operator ☐	Centre N ☐	Cracks ☐	_____			
Doc/Data ☐	Offset/Setup ☐	Crimp/Kink/Ripple/Wave ☐	_____	_____			
Equip/Tooling ☐	Supplier ☐	Cuffs ☐	_____	_____			
Handling/Pre ☐	Training ☐	Crushing ☐	_____	_____			
Material ☐	Use for Testing ☐	Heat Treat ☐	_____	_____			
Internal Transport ☐	Poor Information ☐	Wave/Twist in Tube ☐	_____	_____			
Tribal Knowledge ☐	Rushing ☐	Marks/Chatter ☐	_____	_____			
LOA ☐	Product Improvement ☐	OTHER: ☐	_____	_____			
Substation ☐	Process Improvement ☐			_____			
Past Expiry Date ☐	Manufacturing Process ☐			_____			
Misidentified ☐	Past Due ☐			_____			

S002662
Replacement Skidtube (Fits LH or RH)

PART NO: _____
Revision: _____
Operation: _____
Quantity: _____
Change No: _____
Job No: 166607
Qty Date: 10/26/17
HandFinish 1
D206-642-341BL

Root Cause
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐
No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐
Pressure, ☐ Bending ☐ Centre N ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ OTHER: ☐

AGAINST DEPARTMENT/PROCESS
Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐

QA Coordinator Approval

Completed By

and / Supervisor

Approval Verification

tioned Wrong
ide Dimensions
/Under tolerance
Incorrect
Part Lost/Missing
Part Moved
Drawing
Finish
Misread
Turning Sequence

D4956-11 Wearplate Fwd	DWG REV A SHEETS 1,8 IPP REV:A 14.04.22 NEW ISSUE DD VERF:JLM	F159169	4.000	FP002
		F161572	1.000	FP002
		F164279	2.000	FP002
		F164705	1.000	FP002
		F165747	12.000	FP002
D4956-23 Wearplate Center	DWG REV A SHEETS 4,8 IPP REV:A 14.04.22 NEW ISSUE DD VERF:JLM	F164262	14.000	FP002
Fwd		F165561	1.000	FP002
D4956-35 Wearplate Aft	DWG REV A SHEETS 6,8 IPP REV:A 14.04.22 NEW ISSUE DD VERF:JLM	F161536	16.000	FP002
		F164706	1.000	FP002
		F165749	2.000	FP002
MS27039-1-08 Screw		FM128636	13.000	GA
		FM137820-4	20.000	ST281
		FM138209-1	182.000	FP001
MS27039-4-06 Screw		FM126534	5.000	ST279
		FM137951-1	83.000	FP001
MS27039C1-08 Screw		FM137820-8	171.000	FP001
NAS1149C0332R Washer		FM136444-15	366.000	GA
		FM138207-25	908.000	ST334
		FM138409-1	1,400.000	ST260A
NAS1149D0332J Washer		FM136643-15	170.000	GA
		FM138238-15	1,362.000	ST264
NAS1149D0463J Washer		FM137699-15	298.000	GA
		FM137988	600.000	ST263
		FM138084-1	19.000	ST348
		FM138084-15	3.000	CCK017
		FM138230-3	198.000	ST263

Job Routing

Op No	Operation	Qty	Due Date	Standard		Workcenter/Supplier	
				Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	1 Ea	10/26/17	0.00	0.00	Start up container	
100	DC	1 pcs	10/26/17	0.00	0.00	DC	
110	Skidtubes	1 pcs	10/26/17	0.00	1.58	Skidtubes	
115	QC	1 pcs	10/26/17	0.00	0.00	QC5	
116	QC	1 pcs	10/26/17	0.00	0.00	QC9	
120	HandFinish	1 pcs	10/26/17	0.00	1.17	HandFinish1	
125	QC	1 pcs	10/26/17	0.00	0.00	QC7	
130	Skidtubes	1 pcs	10/26/17	0.00	1.58	Skidtubes	
140	QC	1 pcs	10/26/17	0.00	0.00	QC5	
150	Skidtubes	1 pcs	10/26/17	0.00	1.58	Skidtubes	
180	QC	1 pcs	10/26/17	0.00	0.00	QC5	
190	HandFinish	1 pcs	10/26/17	0.00	1.17	HandFinish2	
200	Purchasing	1 pcs	10/26/17	0.00	0.00	Purchasing	
205	QC	1 pcs	10/26/17	0.00	0.00	QC6	
210	QC	1 pcs	10/26/17	0.00	0.00	QC14	
220	HandFinish	1 pcs	10/27/17	0.00	1.17	HandFinish4	
230	QC	1 pcs	10/27/17	0.00	0.00	QC3	
240	QC	1 pcs	10/27/17	0.00	0.00	QC5	
250	Packaging	1 pcs	10/27/17	0.00	0.00	Packaging3	
260	QC21-FG	1 Ea	10/27/17	0.00	0.00	QC21	

Part Op 100 - Photocopy bluefile and create labels per PPP D206-642-341 CHG005

Descriptions: 110 - 1-Deburr Fwd edge of tube 2-Scribe "Identify Batch Number" 3-Remove ridge on inside of Fwd edge of tube as per Dwg D2650 4-Weld Fwd Cap as per Dwg D2650. Use aluminum rod. Grind D2647 to fit as required. A/R Aluminum Rod 5-Grind weld flush to cap on top surface only. 6-Cut aft end to length as per dwg D2650 7-Drill pilot holes

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐		OTHER :					

using drill Jig DT8168A (A, & B) and DT8025. 8-Drill holes for wearplates using DT 8028-5. Open to Ø 0.297". 9-Open Aft Cap Hole using #6 Drill Bit 10-Open holes for Tow Ring to Ø0.625" as per Dwg D2650, D2650-5 Drilling Detail 11- Remove inner indexing ridge on aft end of skidtubeas per Dwg D2650 12- Ream holes to finished size as per Dwg D2650, D2650-5 Drilling Detail (without cutting fluid) 13-Deburr.

130 - 1- Bond D2654-5 web in place as per QSI 015 Ensure holes line up Allow 12 Hrs. cure time before cutting Start Date: 17/10/23 Time: 16.15 Finish Date: 17/10/23 Time: 16.30 A/R Sikaflex-291 M138535 **DAS 13 9-59**
Sikaflex expiry date: 2018-04-21

150 - 1- Insert D4720-1 Spacer. Swage to 0.313" X 0.75" DP per QSI 002. Trim and grind flush per QSI 002

200 - ISSUE PO 38152 ***MASK ALL SADDLE AND GROUND HANDLING ATTACHMENT HOLES AS PER PAR16-484*** Make sure Nut Plate Thread is protected using paint screw, and mask GHW studs. PRIME: Start Time: _____ Finish Time: _____ PAINT: DELFLEET BLUE _____ Start Time: _____ Finish Time: _____ CLEAR DELFLEET B _____

220 - 1-Install inserts & wearpads as per dwg D2922. Use a drop of Sikaflex inside insert holes before installing wearpad/wearplate. A/R Sikaflex-291 M137526 Sikaflex expiry date: 17-11 2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2650. Clean excess adhesive 3-Install MS27039-4-06 Screw 4-Inspect for foreign object per QSI 024 5-Install D2646 Aft Cap and seal with SikaflexClean excess adhesive A/R Sikaflex-291 137526 Sikaflex expiry date: 17-11 6- Install D2680-041 Nut Plate as per Dwg D2650 7-Wing Walk as per Dwg D2650-5 and QSI 005 4.4 Batch: M137526-138373

250 - Identify and pack for shipping as per PPP D206-642-341 Location:FG083

Job Allocations

Operation	Component Part	Required	Inventory	Allocated	Std Qty
90-Start up Operation	D2620 <u>B164474</u>	1	30	0	0
	D2647 <u>B163996</u>	1	41	0	0
	D2654-5 <u>B164376</u>	1	3	0	0
150-Skidtubes	D4720-1 <u>B163757</u>	19✓	590	0	0
220-HandFinish	ALS4-1032-130	54	120	0	0
	CCR264SS3-3	2	298	0	0
	CR3212-4-03	2	249	0	0
	D2646BL	1	14	0	0
	D2651-1BL	14	521	0	0
	D2651-3	14	544	0	0
	D2680-041	1	77	0	0
	D3537-1	6	107	0	0
	D3537-3	1	19	0	0
	D4956-11	1	20	0	0
	D4956-23	1	15	0	0
	D4956-35	1	19	0	0
	MS27039-1-08	2	215	0	0
	MS27039-4-06	1	88	0	0
	MS27039C1-08	54	171	0	0
	NAS1149C0332R	54	2,674	0	0
	NAS1149D0332J	2	1,532	0	0
	NAS1149D0463J	1	1,118	0	0

Part Specifications

Specifications could not be found.

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval																																																										
Description Work Order Deviation				Disposition				Completed By																																																									
								Lead hand / Supervisor Approval Verification																																																									
								QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
X				D2650-1	SKIDTUBE ASSEMBLY
	X			D2650-3	SKIDTUBE ASSEMBLY
		X		D2650-5	SKIDTUBE ASSEMBLY
			X	D2650-7	SKIDTUBE ASSEMBLY
1	1	1	1	D2600-1-160	EXTRUSION
1				D2654-1	WEB
	1			D2654-3	WEB
		1		D2654-5	WEB
			1	D2654-7	WEB
1	1	1	1	D2646	AFT CAP
1	1	1	1	D2647	CAP
17	18	19	23	D2649	CROSS BOLT SPACER
16	18	14	22	D2651-1	PLUG
16	18	14	22	D2651-3	O-RING
1	1	1	1	D2680-041	NUT PLATE
2	2			D3286-1	DOUBLER
2	2			D3286-3	STUD
42	44	54	60	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, ALS7-1032-130)
2	2	2	2	AN960JD10L	WASHER
2	2	2	2	CCR264SS3-3	RIVET
2	2	2	2	CR3212-4-03	RIVET
2	2	2	2	MS27039-1-08	SCREW
1	1	1	1	MS27039-4-06	SCREW
1	1	1	1	AN960JD416	WASHER
52	52			CR3212-4-04	RIVET

F

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 166607 MP
OCT 12 2017

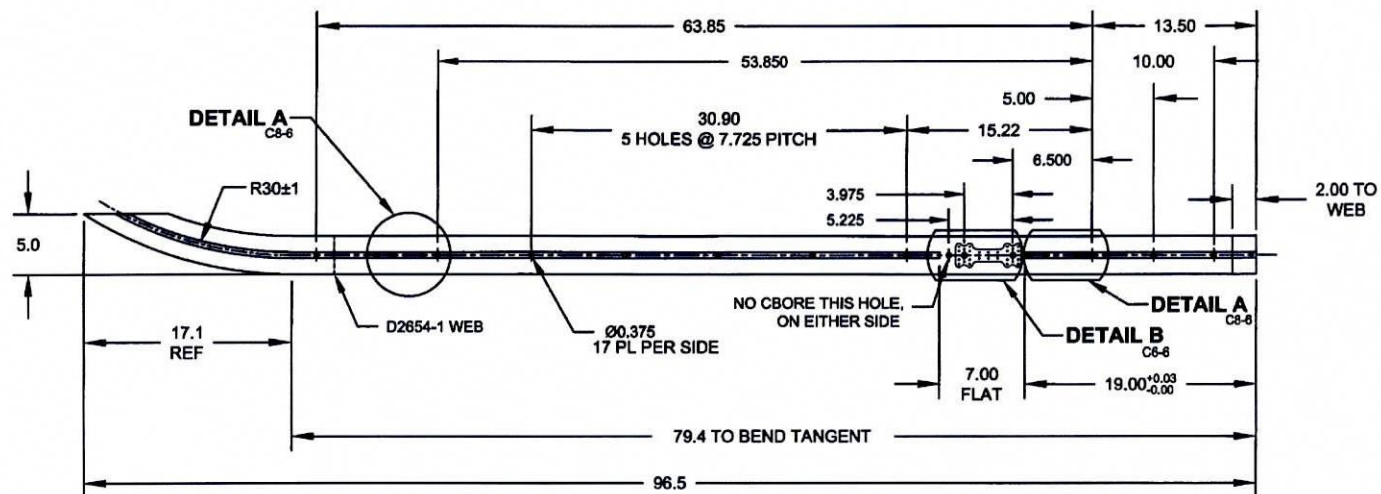
DEO ATTACHED

RELEASED
08.07.23/17

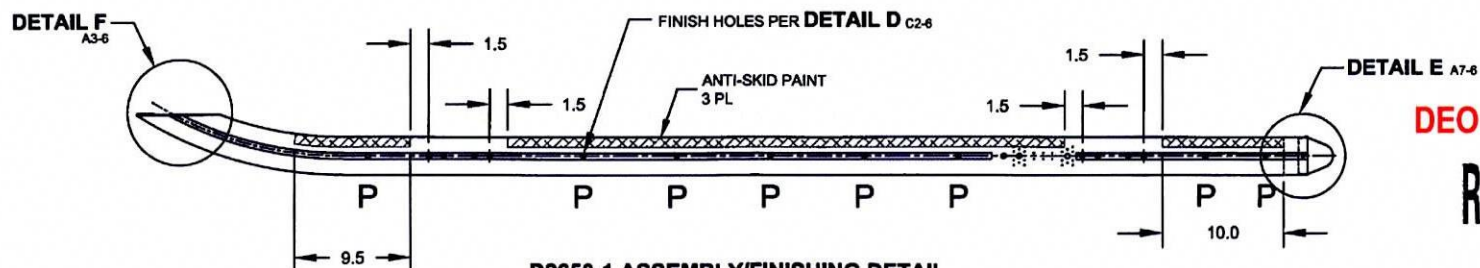
NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: -CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
-POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
-BLACK ANTI-SKID PAINT AS INDICATED TO 0.5 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: NONE
- 7) WEIGHT: N/A
- 8) WELD PER DART QSI 004
- 9) DAMAGE TOLERANCE ON FWD BEND:
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 5 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
- 10) BOND WEB INTO OUTER TUBE WITH SIKAFLEX-241/-291 ADHESIVE PER DART QSI 015
- 11) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE)
- 12) DRILL Ø0.297 FOR ALS7-1032-130 INSERTS USING TEMPLATE DT8056-1 ON -1 TUBE, DT8056-3 ON -3 TUBE, DT8056-5 ON -5 TUBE, AND DT8056-7 ON -7 TUBE. INSTALL INSERTS AFTER FINISH.
- 13) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

F	DRAWING UPDATED TO CURRENT STANDARDS. SHT 6 ADDED. ALL SECTION AND DETAIL VIEWS TRANSFERRED TO SHT 6. SHT 1 IN PL PART D2649 QTY UPDATED. SHT 6 SECT C-C GRIND INSTRUCTIONS DELETED FROM NOTE 7 (SEE NCR 239).	AJS	08.08.08
E	RMOVE CBORE, CHG DRILL, ADD CHAMFER	CP	08.03.30
D	REDRAW; INCCRP. DE09136/9153/9163 MOD GROUND HANDLING ON D2650-1/-3	CP	04.05.17
C	CHANGE HOLE PATTERN AND FRONT END	DS	97.10.29
B	AS MANUFACTURED CHANGES	DS	97.06.26
A	NEW ISSUE	DS	97.03.25
REV.	DESCRIPTION	BY	DATE
DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 1 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
DATE	08.08.08	COPYRIGHT © 1997 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



D2650-1 BENDING/DRILLING DETAIL

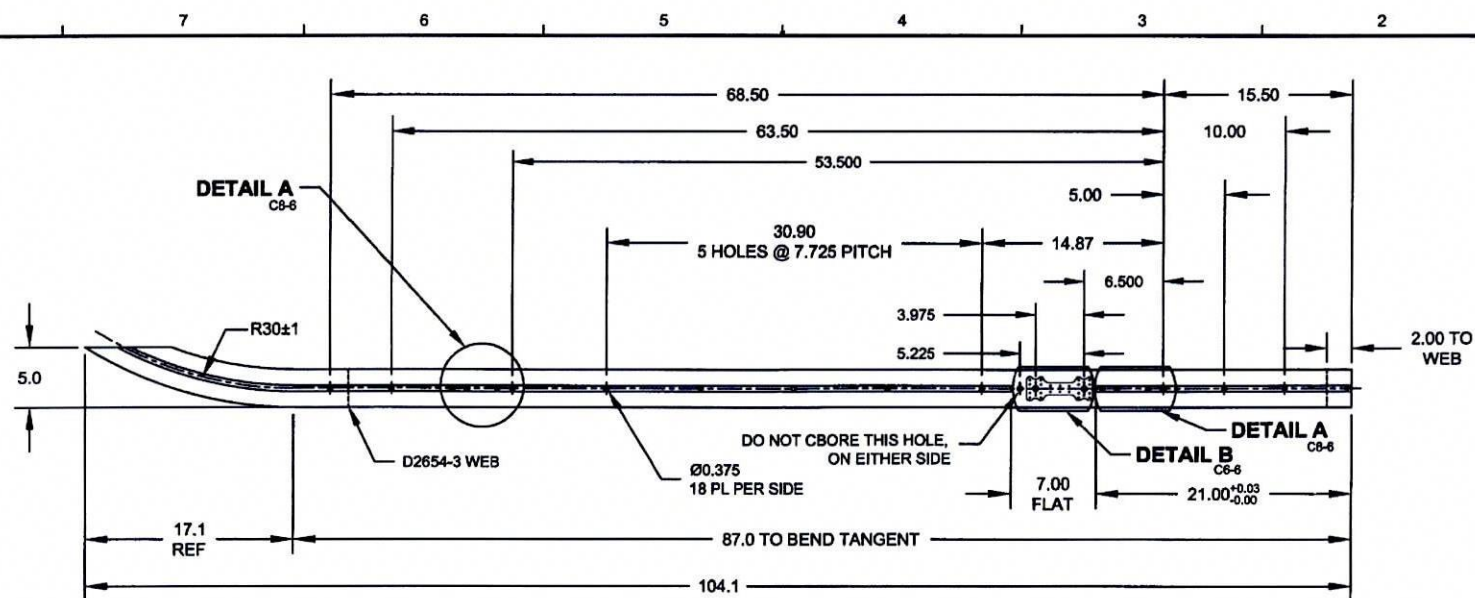


D2650-1 ASSEMBLY/FINISHING DETAIL

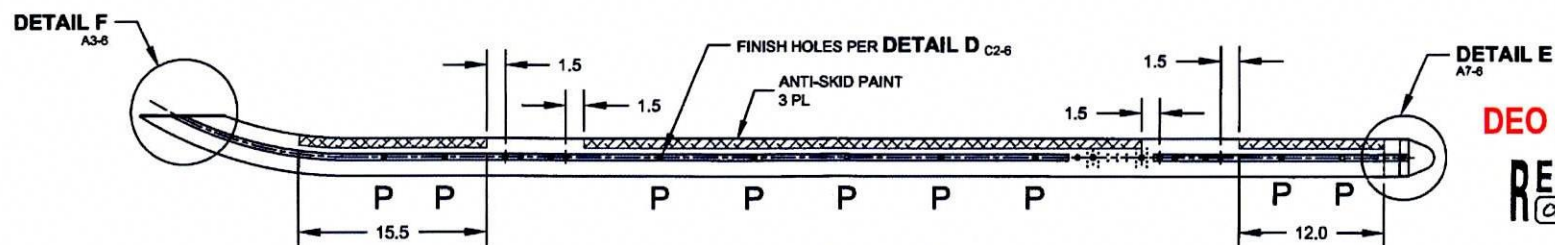
DEO ATTACHED

RELEASED
68 09 22 1114

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 2 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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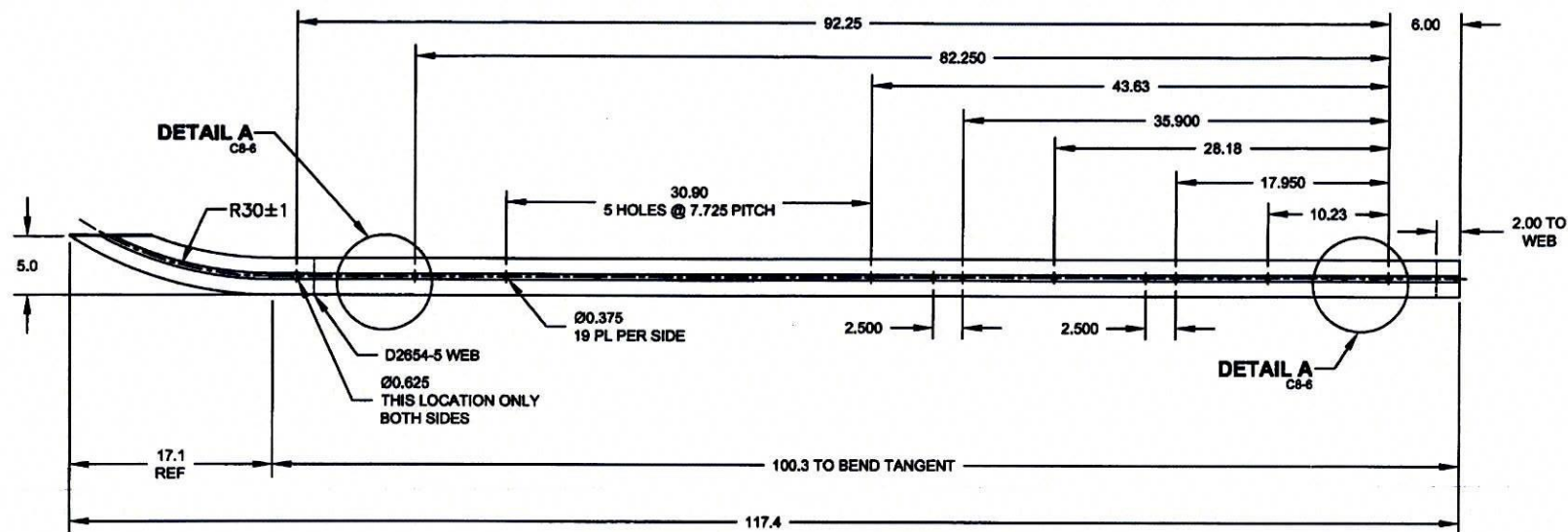
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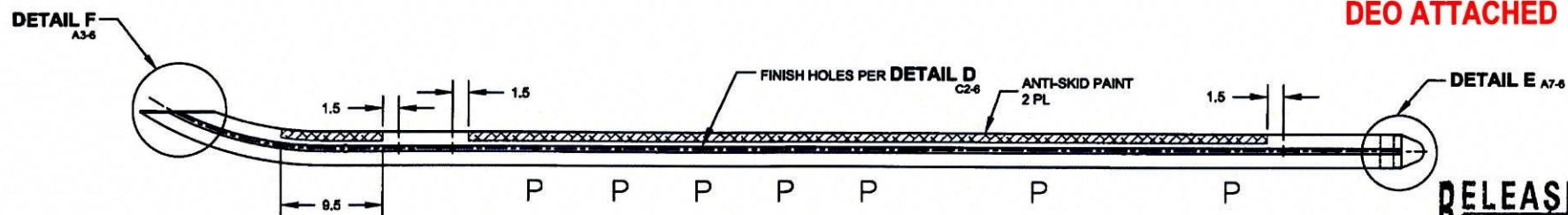
D2650-3 ASSEMBLY/FINISHING DETAIL

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05-07-22/114

DESIGN	DS	DART AEROSPACE USA, INC	
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CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 3 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTOE ASSEMBLES	NTS
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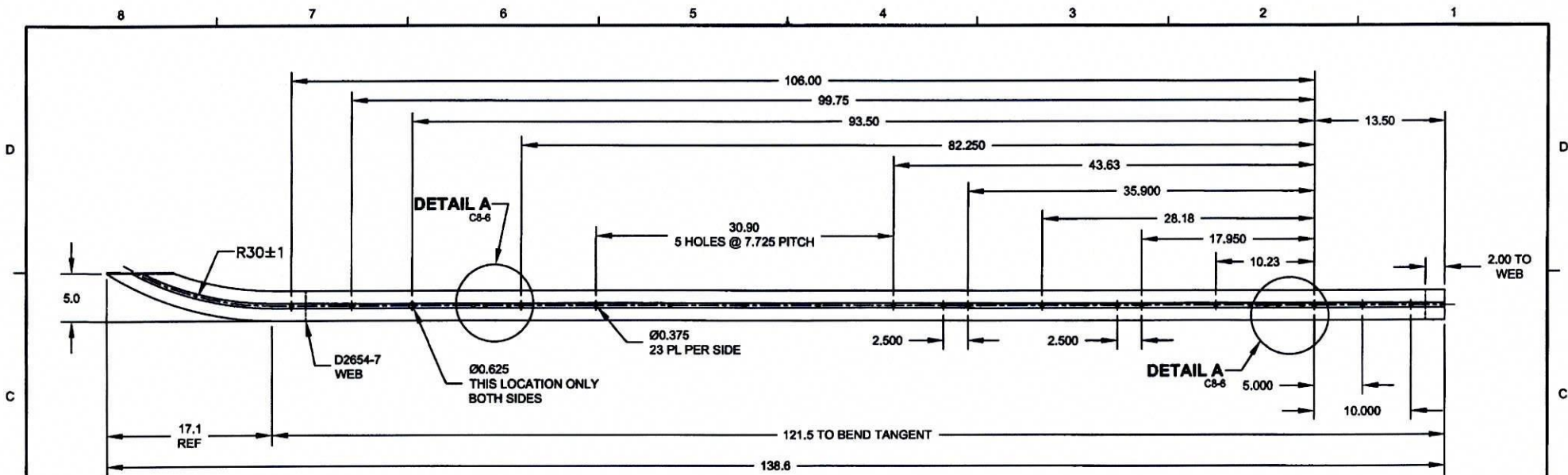
D2650-5 BENDING/DRILLING DETAIL



D2650-5 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	A/S	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 4 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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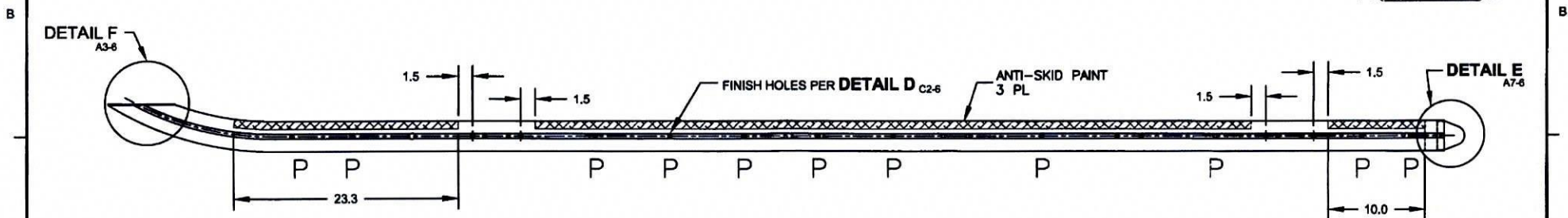
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D2650-7 BENDING/DRILL DETAIL

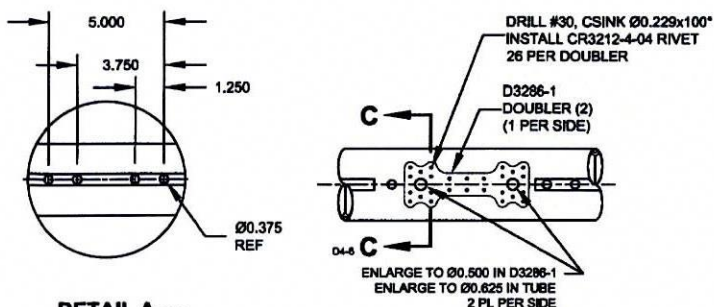
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RELEASED
08 07 22 1111



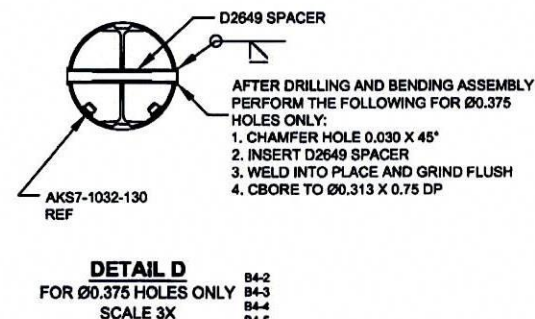
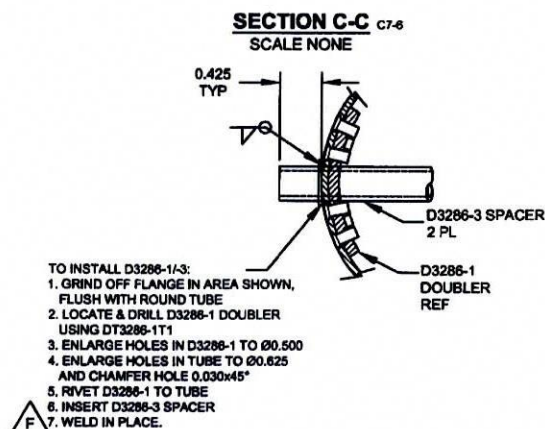
D2650-7 ASSEMBLY/FINISHING DETAIL

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 5 OF 8
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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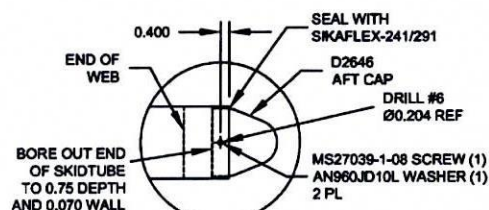


DETAIL A
SCALE 2X
C2-2
D7-2
C2-3
D7-3
C2-4
D7-4
C2-5
D6-5

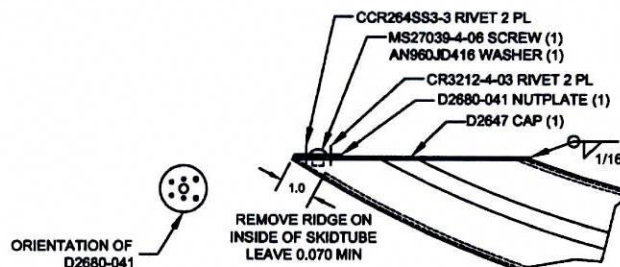
DETAIL B
SCALE 2X
C3-2
C3-3



DETAIL D
FOR Ø0.375 HOLES ONLY
SCALE 3X
B4-2
B4-3
B4-4
B4-5



DETAIL E
SCALE 2X
B2-2
B2-3
B1-4
B1-5



DETAIL F
SCALE NONE
B8-2
B8-3
B8-4
B8-5

- DETAIL F NOTES:**
1. CUT TUBE LEVEL
 2. REMOVE RIDGE ON FWD SIDE
 3. LOCATE D2647 (TRIM AS NECESSARY)
 4. WELD D2647 IN PLACE PER DART QSI 004
 5. GRIND FLUSH
 6. RIVET D2680-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D2680-041 PRIOR TO FINISH

RELEASED

DEO ATTACHED

DESIGN	DS	DART AEROSPACE USA, INC	
DRAWN	AJS	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D2650	SHEET 6 OF 6
APPROVED		TITLE	SCALE
DE APPR.		206/407 SKIDTUBE ASSEMBLIES	NTS
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DRAWING NO. D2650	TITLE 206/407 SKIDTUBE ASSEMBLIES	REV. F	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D2650-F-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>[Signature]</i>	CHECKED A.P.	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 12.10.12	DATE 12.10.22	DATE 12.10.22	DATE 12.10.22		DATE 12.10.22		

PURPOSE:

CHANGE C'BORED WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:

PARTS LIST IS AMENDED AS FOLLOWS:

IS:

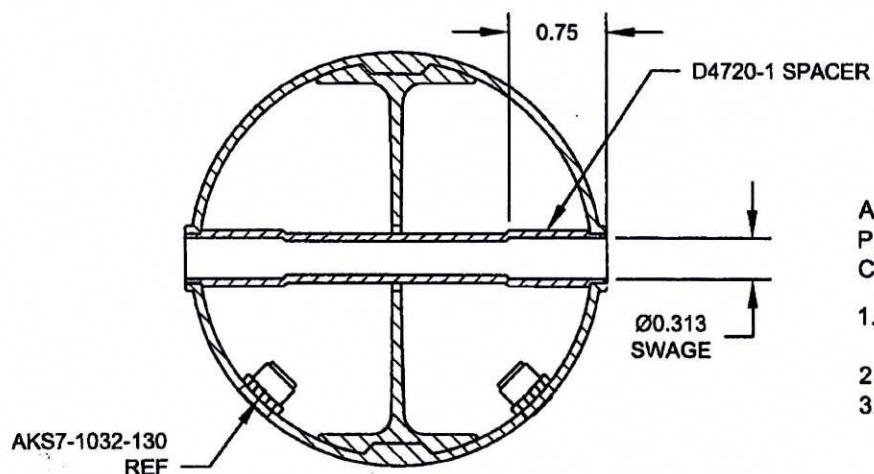
QTY -1	QTY -3	QTY -5	QTY -7	PART NUMBER	DESCRIPTION
1	1	0	0	D2649	CROSS BOLT SPACER
16	17	19	23	D4720-1	SPACER

WAS:

17	18	19	23	D2649	CROSS BOLT SPACER
----	----	----	----	-------	-------------------

ADD DETAIL G BELOW, WHICH IS THE SAME SECTION VIEW AS DETAIL D OF DWG.

C'BORED HOLES ARE NOW SWAGED PER DETAIL G BELOW. FOR THE Ø0.375 HOLE THAT IS NOT C'BORED, WELD PER DETAIL D OF DWG (SEE AMENDED DETAIL B FOR REFERENCE).



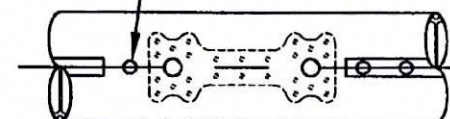
DETAIL G

FOR Ø0.375 HOLES ONLY

FOR HOLES THAT ARE CURRENTLY C'BORED ONLY

NOT TO SCALE

D2649 SPACER,
WELD PER DETAIL D OF DWG
BUT DO NOT C'BORE



DETAIL B

AMENDMENT TO DETAIL B
NOT TO SCALE

RELEASED
2012-11-16
[Signature]

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.375 HOLES THAT ARE
CURRENTLY C'BORED:

1. INSERT D4720-1 SPACER, 16 PL (-1) OR 17 PL (-3)
OR 19 PL (-5) OR 23 PL (-7)
2. SWAGE TO Ø0.313 X 0.75 DP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002



Dart Hawkesbury
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO038152

Supplier: ATE003-VC
Atelier Debosselage
358 Principale
Calumet
QC
J0V 1B0 Canada
Phone: 819 242 5633

PO No: PO038152
PO Date: 10/26/17
Due Date: 10/27/17
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Lavoie, Chantal
Phone: clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Rev	Description	Item Tax	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	166609	D206- 642- 341BL	-	prime and paint delfleet blue		Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
2	166598	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
3	166601	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
4	166607	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
5	166596	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
6	166588	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
7	166590	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00
8	166604	D206- 642- 341BL	-			Firmed	10/27/17	1 pcs	0 pcs	1 pcs	\$225.00/pcs	\$225.00

Grand Total: \$1,800.00

Order Notes

DWG REV F(DEO) IPP Rev: H 05.10.11 Added D3429-1 per CHG004 KJ/CP/JLM IPP Rev: I 08-09-29 rev F as per dwg DD verified by: EC
Est Rev: J 09-03-02 as per DSI9440 rev. a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC ver: DD IPP Rev: L
12.11.22 now swage per ecn12-679 DD ver: JLM IPP Rev: M 14.04.25 ECN14-520 DD ver: JLM IPP REV: N 15.10.09 ADDED BL DD
VERF: JLM IPP REV: O 16.01.22 PAR16-484 DD VERF: JLM

DWG REV F(DEO) IPP Rev: H 05.10.11 Added D3429-1 per CHG004 KJ/CP/JLM IPP Rev: I 08-09-29 rev F as per dwg DD verified by: EC
Est Rev: J 09-03-02 as per DSI9440 rev. a DD verified by: EC IPP rev K 10.08.03 chg ms27039-1-08 for "C" type EC ver: DD IPP Rev: L
12.11.22 now swage per ecn12-679 DD ver: JLM IPP Rev: M 14.04.25 ECN14-520 DD ver: JLM IPP REV: N 15.10.09 ADDED BL DD
VERF: JLM IPP REV: O 16.01.22 PAR16-484 DD VERF: JLM